1. What type of intermolecular attraction occurs between H₂O molecules?

2. A solution contains of 20.0 g of KOH and 150.0 g of water. What is the % KOH?

3. What is the molarity of 5.0 g of KN₃ dissolved to make 500.0 mL of solution?

4. How many mL of a 3.71M solution are needed to have 0.803 mol of solute?

5. If 12 mL of a 12 M HCl solution is diluted to a final volume of 200 mL, what must the final molarity be?

6. What is the final volume of solution if 250 mL of 5.0% NaCl solution is diluted to prepare an isotonic 0.90% solution?

7. How many mL of a 0.500 M acetic acid solution are needed to prepare 175 mL of 0.0900 M acetic acid solution?

8. How many mL of a 0.57 N solution are needed to titrate (neutralize) 15 mL of 12 N HCl?

9. What is the pH if [H⁺] = 2.2 × 10⁻³ M? What is the [OH⁻] of this solution?

10. Which solution has a higher osmotic pressure? 0.1 M or 0.2 M NaCl

11. A hypertonic solution causes a cell to ___________. This is called ___________.

12. When dissolved electrolytes form _______ that allow the solution to conduct electricity. _______ electrolytes conduct well.

13. Is KNO₃ more soluble in water at high or low temperatures?

14. Label the following as strong or weak, acid or base. H₂C₂H₃O₂; Ca(OH)₂; HClO₂; HBr; CsOH

15. Define: Bronsted/Lowry base; buffer; Henry’s law.

16. The products of a neutralization reaction are usually _______ and _______.

17. (T/F) a) Litmus is blue in acid. b) Acids taste sour.

18. Litmus is added to an acid which is then titrated with base. The color turns from _______ to _______ at the endpoint.

19. Define and distinguish between solutions, colloids, and suspensions.

20. Write the formulas for hydrobromic acid, chlorous acid, carbonic acid, and strontium hydroxide.

21. Name: H₂SO₄, HI, HNO₃, CsOH. Should be H₂SO₃

22. Ammonia, NH₃, is a weak ________________.

23. Classify each of the following as an electrolyte or a nonelectrolyte. CH₂O, H₂S, CCl₄, Na₂SO₄, Sr(OH)₂

24. Isotopes contain different numbers of ________________.

25. What type of radiation is most penetrating?, most ionizing?, heaviest?, fastest moving?

26. What do the letters in the unit rem stand for? How is it calculated?

27. Radiation can be detected with a __________________. __________________. __________________. __________________.

28. Which has/have advantages of a) immediate, b) portable, c) sensitive, and d) cumulative over time?

29. The time required for one-half of a radioisotope to decay is called __________________.

30. The opposite of fission is ___________. Define this term.

31. Is there a relationship between atomic number and radioisotopes?

32. Alpha, beta, and gamma radiation are all harmful because they are forms of ________________ radiation.

33. We protect ourselves from radiation using __________________. __________________.

34. Balance the nuclear reactions: 

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\begin{align*}
\text{Balance the nuclear reactions: } & \quad ^{32}_{15}P \rightarrow \text{ } \text{ } \text{ } \text{ } \text{ } + \begin{array}{c}
\text{and} \\
^{0}_{-1}e
\end{array} \quad ^{242}_{96}Cm + ^{4}_{2}He \rightarrow \text{ } \text{ } \text{ } \text{ } \text{ } + ^{1}_{0}n
\end{align*}
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35. The activity of a radioactive source can be measured in __________________.